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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/505,429	02/16/2000	Takao Toi	Q57908	7134

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Sughrue, Mion, Zinn, MacPeak & Seas
2100 Pennsylvania Avenue N.W.
Washington, DC 20037

EXAMINER

LAROSE, COLIN M

ART UNIT PAPER NUMBER

2623

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/505,429

Applicant(s)

TOI, TAKAO

Examiner

Colin M. LaRose

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed 16 February 2000 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,486,853 by Baxter et al. ("Baxter") and U.S. Patent 5,301,344 by Kolchinsky.

Regarding claim 1, Baxter discloses an image processing system (figures 8 and 9), an image processing method of the system comprising the steps of:

executing digital image processing of interval of active pixel by processor 66 (figure 8) to perform various functions on pixel data (column 7, lines 18-31: automatic gain control, luminance derivation, etc.);

executing digital control processing according to commands issued during an interval of non-active pixel (i.e. during blanking periods); [Column 7, lines 48-55: control commands are received by processor 70 during blanking period and executed accordingly.]

executing digital image processing again (each line of an image constitutes a different active/non-active region, so digital image processing is repeated for every said region in order to process an entire image).

Baxter is silent to utilizing an FPGA for executing said image and control processing wherein first and second internal logic descriptions, corresponding to each processing, are written to the FPGA. Instead, Baxter teaches utilizing dedicated processors 66 and 70 for executing each type processing.

Kolchinsky discloses a reconfigurable image processing system (figure 2) that is implemented by FPGAs (22 and 26, figure 2), wherein arithmetic unit 26 is operative to process image data. Kolchinsky teaches that, conventionally, separate image processing operations require separate hardware (column 1, lines 23-24). Baxter, as noted above, requires separate processors (66, figure 8, and 70, figure 9) for image processing and control processing.

Kolchinsky's system uses reconfigurable gate arrays to perform a variety of operations, so that processing algorithms "can be changed easily and quickly without hardware replacement" (column 2, lines 1-2). That is, the functions of multiple dedicated processors such as those taught by Baxter are performed by a single reconfigurable processor disclosed by Kolchinsky.

With reference to figure 3, first, the command corresponding to the operation to be executed is read from the command file at step 50. Then, the code corresponding to the operation is identified and placed into a register at step 52. Then, the command is executed at step 58 on the condition that proper reconfiguration of internal logic has occurred.

Kolchinsky teaches (figure 4) that both image processing (e.g. image compression, color processing) and control processing (e.g. zooming/panning) are executed by the system.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace Baxter's separate processors 66 and 70 by Kolchinsky's reconfigurable FPGAs to achieve the claimed invention since Kolchinsky provides a much simpler and more hardware-efficient system for effecting image and control processing.

Regarding claim 2, Baxter teaches there is provided an image pick-up element (CCD 22, figure 9), the system executing color signal processing during active pixel interval and control processing during non-active interval, as addressed above for claim 1.

Regarding claim 3, Baxter teaches interval of non-active pixel is a VBI (column 7, lines 48-51).

Regarding claims 4 and 7, Baxter does not expressly disclose utilizing the HBI and optical black pixel interval as non-active regions, however, effecting control processing during the HBI and optical black pixel intervals was well-known by those skilled in the art and was a common practice at the time the invention was made. Official notice taken.

Regarding claims 8-10, Baxter (column 7, lines 18-31) and Kolchinsky (figure 4) disclose performing white balance, AF, and lightness control processing.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baxter and Kolchinsky, and further in view of U.S. Patent 5,754,227 by Fukuoka.

Regarding claims 5 and 6, Baxter (column 7, lines 40-43) and Kolchinsky (figure 4) teach executing compression but do not expressly disclose executing control processing, such as code quantity control, in relation to the image compression in the non-active interval.

Fukuoka discloses a camera interface similar to that of Baxter wherein control commands are issued during the non-active interval (column 8, lines 40-43). Fukuoka also teaches performing compression on the active part of the image and teaches that control commands sent during the non-active interval comprise compression parameters, such as a scale factor, or code quantity (column 10, lines 7-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Baxter and Kolchinsky by Fukuoka to achieve the claimed invention since the ability to adjust the compression ratios and scale factors, as taught by Fukuoka, provides control over the compression operations.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. The examiner can normally be reached Monday through Thursday from 8:00 to 5:30. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

CML

Group Art Unit 2623

9 December 2002



AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600